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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,112	12/15/2003	Yongming Lou	P24045	4856
7055 7590 04/06/2007 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER PONIKIEWSKI, TOMASZ	
			ART UNIT 2165	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		04/06/2007	ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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pto@gbpatent.com

<b>Office Action Summary</b>	Application No. 10/734,112	Applicant(s) LOU, YONGMING	
	Examiner Tomasz Ponikiewski	Art Unit 2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-6, 10-12, 14-21, 31-34, 36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-6, 10, 14-21 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 11-12, 34 and 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. The Amendment filed on December 20, 2006 has been received and entered. Claims 1-2, 7-9, 13, 22-30 and 35 have been cancelled. New claims 36 and 37 have been added. Therefore, claims 3-6, 10-12, 14-21, 31-34, and 36-37 are pending.
2. The Applicant's communication overcomes some objections and rejections under 112 and 101.

### ***Election/Restrictions***

3. Newly submitted claim 37 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The newly added claim 37 is part of non-elected group V.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 37 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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5. Claim 14 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 3-6, 10, 14, 31 does not list any hardware (i.e. computer) tied to the steps in order to operate the steps of the claims therefore resulting in software only implementation. Claim 31 needs a processor for the code to perform its functionality.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 is directed to a system in the preamble. The body of the claim is not directed to a system. There is no nexus between preamble and body of claim and it does not achieve the intended use of being a system as recited in preamble. The body of the claim is directed to steps or modules of software only.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims 3-6, 10, 14 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3-6, 10 and 31 recite, "enabling". Enabling does not mean that the step is being accomplished. Enabling is directed to a not definite "make possible" language. It suggests a capability but not necessarily taking place. It should be amended to recite definite language i.e. "activate".

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 3-6, 10, 14, 16-18, 20-21 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Klein et al. (US 6,397,227 B1).

As per claim 3 Klein et al. is directed to a method of rollbacking a table of an active database to a point-in-time, the table having a before image table and an after image table, the method comprising:

retrieving a retention time for the table (column 22, lines 11-15, wherein the log would keep the retention time for the updates, represented by timestamp);

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determining that the retention times time for the table is not greater than the point-in-time (column 12, lines 20-25);

locking the table and disabling associated referential integrity constraints (column 10, lines 60-61, wherein row could be replaced with a table);

deleting rows from the after image table having a timestamp greater than the point-in-time (column 12, lines 7-17, wherein the range could mean the point-in time);  
and

inserting into the after image table, rows from the before image table having a timestamp less than or equal to the point-in-time and having a changing timestamp greater than the point-in-time (column 12, lines 7-17); and

enabling the associated referential integrity constraints, wherein the table is rollbacked to the point-in-time (column 12, lines 48-50).

As per claim 4 Klein et al. is directed to a method of rollbacking a table of an active database to a point-in-time, the table having a before image table and an after image table, the method comprising:

retrieving a retention time for the table (column 22, lines 11-13, wherein the log would keep the retention time for the updates, represented by timestamp);

determining that the retention times time for the table is not greater than the point-in-time (column 12, lines 20-25);

retrieving a transaction id set comprising any transaction id that begins before or

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at the point-in-time and ends after the point-in-time (column 13, lines 7-9; column 22, lines 11-15);

locking the table and disabling associated referential integrity constraints (column 10, lines 60-61, wherein row could be replaced with a table);

deleting rows from the after image table having a timestamp greater than the point-in-time or having a transaction id that is a proper subset of the transaction id set (column 12, lines 7-17, wherein the range could mean the point-in time);

inserting into the after image table, rows from the before image table having a timestamp less than or equal to the point-in-time and having a transaction id that is not a proper subset of the transaction id set, and having a changing transaction id that is a proper subset of the transaction id set or having a changing timestamp that is greater than the point-in-time (column 12, lines 7-17); and

enabling the associated referential integrity constraints, wherein the table is rollbacked to the point-in-time (column 12, lines 48-50).

As per claim 5 Klein et al. is directed to a method of rollbacking a row in a table of an active database to a point-in-time, the database table having a before image table and an after image table, the method comprising:

retrieving a retention time of the table (column 22, lines 11-13, wherein the log would keep the retention time for the updates, represented by timestamp);

determining that the point-in-time is greater than or equal to the retention time (column 12, lines 20-25);

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locking the table to be rolled back and disabling associated referential integrity constraints (column 10, lines 60-61, wherein row could be replaced with a table);

deleting the row from the after image table having a timestamp greater than the point-in-time (column 12, lines 7-17, wherein the range could mean the point-in time);

inserting into the after image table, a before image of the row from the before image table having a timestamp less than or equal to the point-in-time and having a changing timestamp that is greater than the point-in-time (column 12, lines 7-17); and

enabling the associated integrity constraints, wherein the row is rolled back to the point-in-time (column 12, lines 48-50).

As per claim 6 Klein et al. is directed to a method of rolling back a row in a table of an active database to a point-in-time, the database table having a before image table and an after image table, the method comprising:

retrieving a transaction id set comprising any transaction id that begins before or at the point-in-time and ends after the point-in-time (column 12, lines 20-25; column 22, lines 11-15);

retrieving a retention time of the table (column 22, lines 11-13, wherein the log would keep the retention time for the updates, represented by timestamp);

determining that the point-in-time time is greater than or equal to the retention time (column 12, lines 20-25);

locking the table to be rolled back and disabling associated referential integrity constraints (column 10, lines 60-61, wherein row could be replaced with a table);



deleting the row from the after image table having a timestamp greater than the point-in-time or having a transaction id that is a member of the transaction id set (column 12, lines 7-17, wherein the range could mean the point-in time);

inserting into the after image table, a before image of the row from the before image table having a timestamp that is less than or equal to the point-in-time and having a transaction id that is not a proper subset of the transaction id set, and having a changing transaction id that is a proper subset of the transaction id set or having a changing timestamp that is greater than the point-in-time (column 9, lines 9-12; column 12, lines 7-17; column 13, lines 7-9; column 12, lines 7-17); and

enabling the associated referential integrity constraints, wherein the row is rollbacked to the point-in-time (column 12, lines 48-50).

As per claim 10 Klein et al. is directed to a method of rollbacking a transaction id set in a plurality of tables of an active database, each of the plurality of tables having a before image table and an after image table, the method comprising:

retrieving an earliest starting time of the transaction id set (column 9 lines 52-54; wherein the earliest time is the first time registered for update);

retrieving a latest retention time for each of the plurality of tables (column 22, lines 11-13, wherein the log would keep the retention time for the updates, represented by timestamp);

determining that the earliest starting time is greater than the latest retention time (column 12, lines 20-25);

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locking each of the plurality of tables to be rolled back and disabling associated referential integrity constraints (column 10, lines 60-61, wherein row could be replaced with a table);

rollback the transaction id set in each of the plurality of tables (column 2, lines 61-67; column 3, line 1); and

enabling the associated referential integrity constraints (column 12, lines 48-50).

As per claim 14 Klein et al. is directed to a system implemented with an active database, the system comprising:

a plurality of user application after image tables, wherein each of the tables has one before image table to store before images, and one after image view (column 2, lines 61-67; column 3, line 1, wherein log could be a table; column 22, lines 15-17);

a first table including a table name field, a retention time field, and an export timestamp field (column 22, lines 14-14, wherein each log entry could be a table);

an image manager that creates image views (column 21, lines 61-66); and

a rollback manager that manages the first table (column 21, lines 34-36),

wherein the rollback manager is configured to rollback data in database tables and reconstruct SQL statements of committed transactions (column 21, lines 34-59).

As per claim 16 Klein et al. is directed to comprising a third table including fields associated with a transaction id, starting timestamp, and ending timestamp (column 22, lines 14-14, wherein each log entry could be a table).

As per claim 17 Klein et al. is directed to image manager further comprising:  
an inserting trigger that sets parameters for an inserted row in the after image tables (column 21, lines 62-66);

an updating trigger that inserts an original row into a before image table and sets parameters associated with the changed row in the after image tables and the before image tables (column 3, lines 1-7); and

a deleting trigger that inserts the original row into the before image table and sets parameters associated with the changed row in the before image tables (column 3, lines 1-7).

As per claim 18 Klein et al. is directed to a transaction trigger that records each transaction id (column 9, lines 52-55).

As per claim 20 Klein et al. is directed to the after image tables further including at least one of a timestamp field, user id field, and transaction id field (column 22, lines 14-19).

As per claim 21 Klein et al. is directed to wherein the data includes at least one of rows in the database tables, a transaction set, and a transaction made by a user (column 22, lines 11-19).

As per claim 37 Klein et al. is directed to wherein each of the before image tables includes a changing timestamp field, a changing user id field, a changing transaction id field, an op code field, and fields of an associated after image table (claim not considered as it is a subject matter restricted in the original presentation).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 15, 19 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein et al. (US 6,397,227 B1) in view of Dustan et al. (US 5,884,312).

As per claim 15 Klein et al. does not teach a second table including fields associated with a user session.

Dustan et al. does teach a second table including fields associated with a user session (Dustan et al., column 3, lines 53-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Klein et al. with teachings of Dustan et al. to include a second table including fields associated with a user session because it allows for secure access to the information (Dustan et al., column 3, line 44).

As per claim 19 Klein et al. does not teach a login trigger that records a time when a user enters the database and a logout trigger that records a time when a user exits the database.

Dustan et al. does teach a login trigger that records a time when a user enters the database and a logout trigger that records a time when a user exits the database (Dustan et al., column 13, lines 11-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Klein et al. with teachings of Dustan et al. to include a login/logout trigger that records a time when a user enters or exits the database because it allows to keep information about user sessions as is well known in the art.

As per claim 31 Klein et al. is directed to a method of rollbacking transactions made in a user session in a plurality of tables of an active database, each of the plurality of the tables having a before image table and an after image table, the method comprising:

retrieving each of a starting time, an ending time, (Klein et al.; column 12, lines 15-16);

retrieving a latest retention time for each of the plurality of tables (Klein et al.; column 22, lines 11-13, wherein the log would keep the retention time for the updates, represented by timestamp);

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determining that the starting time is greater than the latest retention time of each of the plurality of tables (Klein et al.; column 12, lines 20-25);

locking each of the plurality of tables to be rolled back and disabling associated integrity constraints (Klein et al.; column 10, lines 60-61, wherein row could be replaced with a table);

rollback the transactions made in the user session in the plurality of tables (Klein et al.; column 2, lines 61-67; column 3, line 1); and

enabling the associated integrity constraints (Klein et al.; column 12, lines 48-50).

Klein et al. does not teach a unique session id of the user session.

Dustan et al. does teach a unique session id of the user session (Dustan et al., column 3, lines 20-21; Dustan et al., column 13, lines 11-13, Dustan et al., column 18, lines 7-9);

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teaching of Klein et al. with teachings of Dustan et al. to include a unique session id of the user session because it allows to keep information about user sessions as is well known in the art.

As per claim 32 Klein et al. as modified is directed to wherein the unique session id comprises a unique identifier of the session provided by a database vendor (Dustan et al., column 9, lines 9-10).

As per claim 33 Klein et al. as modified is directed to the unique session id comprises a session id and a starting timestamp of the session (Dustan et al., column 18, lines 10-12).

### ***Response to Arguments***

13. Applicant's arguments filed December 20, 2006 have been fully considered but they are not persuasive.

As per applicant's argument that Klein et al. does not teach "rollbacking a table in an active database to point-in-time" is not found persuasive.

Klein et al. teaches rollback of transactions in a table to a certain time. The point-in-time is a broad subject and Klein et al. teaches a rollback on abort. The abort happens at a particular point-in-time, therefore Klein et al. teaches rollbacking a table in an active database to point-in-time. In column 13, lines 2-9 Klein et al. teaches returning the session blocks, which would be taken as tables, to original states.

As per applicant's argument that Klein et al. does not teach a before image and an after image is not found persuasive.

Klein et al. teaches a before image and an after image in column 22, lines 15-16.

As per applicant's argument that Klein et al. does not teach retention time is not found persuasive.

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Klein et al. teaches a timestamp in column 22, line 15 which could be taken as retention time for each record or table.

As per applicant's argument that Klein et al. does not teach range of keys is not found persuasive.

Klein et al. clearly shows a range of records in column 9, lines 32-35 and column 12, lines 13-14.

As per applicant's argument that Klein et al. does not teach "disabling and enabling all referential integrity constraints" is not found persuasive.

The disclosure does not teach what the "associated integrity constraints" are. One of ordinary skill in the art would determine the constraints to be directed toward reading and writing, in this case locking could be broadly interpreted as the integrity constraint.

As per applicant's argument that Klein et al. does not teach image manager that creates image views is not found persuasive.

Klein et al. teaches in column 21, lines 61-66 that sql compiler generates the views, not the transaction manager.

As per applicant's argument that there is no motivation to combine teachings of Klein et al. with those of Dustan et al. is not found persuasive.



Dustan et al. teaches keeping unique user id to keep track of which user does what in a given session. The technique is well known in the art where when user log on, the system keeps track of the activities of the particular user through associated user id.

***Allowable Subject Matter***

14. Claims 11-12, 34 and 36 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tomasz Ponikiewski whose telephone number is (571)272-1721. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on (571)272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tomasz Ponikiewski  
April 2, 2007

  
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